



# Quality Management and Quality Assurance Project Plans

## Quality Management Plan for the Hydraulic Fracturing Study

A Quality Management Plan (QMP) documents how an organization will plan, implement, and assess the effectiveness of its quality assurance and quality control operations. Specifically, it describes how an organization structures its quality system, the quality policies and procedures, areas of application, and roles, responsibilities, and authorities. The elements of a quality system are documented in a [Quality Management Plan](#). Both EPA organizations and organizations performing data collection activities funded by EPA are required to document their quality systems. The Quality Management Plan may be viewed as the "umbrella" document under which individual projects are conducted. Project-specific details of individual projects of the organization or program are documented in a [Quality Assurance Project Plan](#) (see [QAPPs](#)).

Given the importance and organizational complexity of the Hydraulic Fracturing Study (i.e., a number of EPA and non-EPA organizations are participating), EPA developed a QMP specifically for the Hydraulic Fracturing Study. While the Hydraulic Fracturing Study QMP was being prepared and approved, for any ongoing project, the lab or center with the lead for conducting that project applied their existing QMP, and the project progressed under an approved QAPP.

### Related information

- [Main page on this study](#)
- [Questions and answers about the study](#)
- [Case study locations for the study](#)
- [Main hydraulic fracturing page](#)

- [Hydraulic Fracturing Study QMP \(PDF\)](#) (49 pp, 905K)

## Quality Assurance Project Plans for the Hydraulic Fracturing Study

A quality assurance project plan (QAPP) describes procedures that ensure that only valid data are generated and used in our study. QAPPs are internal scientifically deliberative documents that describe the methods and quality assurance protocols used in our study. They are internal planning documents prepared, reviewed, and approved by agency technical and quality assurance experts. A QAPP may be updated throughout a project to document changes needed to the initial approach based on results obtained or observations made during the study. Current QAPPs for EPA's hydraulic fracturing study are posted below.

### QAPPs for sampling and related work related to case studies:

- [Bakken Shale / Killdeer County Revised \(PDF\)](#) (95 pp, 7.2 MB)
- [Barnett Shale / Wise County TX \(PDF\)](#) (71 pp, 5.4 MB)
- [Marcellus Shale / Bradford County PA \(PDF\)](#) (87 pp, 1.1 MB)
- [Marcellus Shale / Washington County PA \(PDF\)](#) (90 pp, 1.1 MB)
- [Raton Basin \(PDF\)](#) (94 pp, 4.4 MB)

You will need Adobe Reader to view some of the files on this page. See [EPA's PDF page](#) to learn more.

### Other QAPPs:

- [Statistical assessment of data from hydraulic fracturing service companies - WESTAT \(PDF\)](#) (27 pp, 590 K) – Assessment of data from nine hydraulic fracturing companies to assist EPA in its identification of a random set of oil and gas wells for its 2011 request for well file information.
- [Organization of data from hydraulic fracturing service companies - Eastern Research Group \(PDF\)](#) (79 pp, 1.9 MB) – Organization of the data collected from nine hydraulic fracturing companies in the 2010 information request.
- [Data collection for scenario evaluation - Shaw Environmental & Infrastructure \(PDF\)](#) (87 pp, 2.4 MB) – Gathering and organization of data for use in scenario evaluations from Susquehanna River Basin/Marcellus Shale in Pennsylvania and Garfield County/Piceance Basin in Colorado.
- [Enhancement of Analytical Chemistry Methods \(PDF\)](#) (48 pp, 965K) – Evaluation and enhancement of analytical chemistry methods so that the methods will cover the necessary range of target analytes and be effective in a wide variety of situations.
- [New! Glycol Method QAPP \(PDF\)](#) (37 pp, 3.6MB)
- [Surface water transport modeling of discharge of treated waste waters \(PDF\)](#) (31 pp, 423K)
- [Well file review focusing on well design and construction, and hydraulic fracturing planning and operations \(PDF\)](#) (59 pp, 744 K)
- [National Hydraulic Fracturing Study Evaluation of Existing Production Well File Contents \(PDF\)](#) (17 pp, 7.3 MB)
- [Supplemental well file review - The Cadmus Group, Inc. \(PDF\)](#) (16 pp, 150K)
- [Environmental Justice Analysis \(PDF\)](#) (16 pp, 403 K)
- [Health and Toxicity \(PDF\)](#) (28 pp, 502 K)
- [Modeling impact of hydraulic fracturing on water resources based on acquisition scenarios](#) (36 pp, 1.9 MB)
- [New! NCEA/Tox QAPP \(PDF\)](#) (5 pp, 108K)
- [Hydraulic fracturing scenario modeling - Lawrence Berkeley National Laboratory](#) (36 pp, 1.2 MB)
- [Formation of disinfection by-products from hydraulic fracturing fluid constituents](#) (50 pp, 331 K)
- [New! Waste Water Source Apportionment \(PDF\)](#) (39 pp, 804 K)

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